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APR 22 2004

Serial No: 09/910,402  
Attorney Docket No: 120-382  
Client Ref: 13450CKUS02U

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<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing)		Application Number	09/910,402
		Filing Date	7/20/2001
		First Named Inventor	Vakshoori
		Group Art Unit	2828
		Examiner Name	Nguyen
Total Number of Pages in This Submission		Attorney Docket Number	CORE-70 120-382
		Nortel Ref:	13450CKUS02U

ENCLOSURES (check all that apply)		
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## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Holmes W. Anderson, Reg. No. 37,272 Steubing McGuinness & Manaras LLP
Signature	
Date	April 22, 2004

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Type or printed name	Carol Ann Mahoney		
Signature		Date	April 22, 2004

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Vakshoori

Application No.: 09/910,402

Filed: 07/20/2001

Title: Efficient Fiber-Semiconductor Tunable Laser Source

Attorney Docket No.: CORE-70 120-382

Nortel Ref: 13450CKUS02U

Group Art Unit: 2828

Examiner: Nguyen

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APR 22 2004

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450RESPONSE AFTER FINAL

Dear Sir:

In response to the Final Office Action of February 25, 2004, please amend this application as follows:

In the claims:

Kindly amend the claims as shown on the attached pages.

REMARKS

Claims 1-16 are pending. Claims 1, 9 and 15 are independent claims. Claims 1-7 and 9-16 were rejected. Claim 8 was objected to. Claims 1 and 9-15 are currently amended. It should be noted that the amendments to the claims have been made for purposes of clarification, and do not diminish the scope of the claims. Reconsideration and further examination is respectfully requested.

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Art Unit: 2828

**35 USC §102 Rejections**

The Examiner rejected claims 1-7 and 9-14 under §102(e) as anticipated by Jiang (US 2003/0002545). One claimed embodiment of the present invention distinguishes Jiang because **the VCSEL output is combined with a portion of the optical pump source that is NOT provided to the VCSEL as an input.** Jiang teaches wavelength tuning of a VCSEL. The sections of Jiang cited by the Examiner teach use of a directional coupler for providing pump laser input to the VCSEL and providing a separate output (505) via a single fiber (303). As understood by Applicant, Jiang does not teach or suggest use of a portion of the pump laser output that is not provided to the VCSEL as input. Hence, claim 1 distinguishes the cited reference by reciting: coupling optics coupled with the optical pump source, the VCSEL, and the fiber amplifier so as to receive and combine the VCSEL output **and a second portion of the pump laser output**, and provide the combined output to the fiber amplifier. Similarly, claim 9 distinguishes the cited reference by reciting: light coupling optics configured for coupling the VCSEL laser beam with the second beam and directing the coupled beams into said optical gain fiber, whereby said VCSEL laser beam is combined with a portion of the pump laser output not provided to the VCSEL so as to provide amplification for said VCSEL laser beam.

Another claimed embodiment of the invention distinguishes Jiang because **the output of the pump laser transits the gain fiber twice.** The sections of Jiang cited by the Examiner teach use of a directional coupler for providing pump laser input to the VCSEL and providing a separate output (505) via a single fiber (303). As understood by Applicant, Jiang does not teach or suggest amplification with a gain fiber, whether via single transit or double transit. Hence, claim 15 distinguishes the cited reference by reciting: said multiplexer configured for (a) injecting said pump laser beam from said second input port into said gain fiber so as to optically pump said VCSEL optically coupled to said output gain fiber and thereby cause it to emit a VCSEL laser beam that is injected into said one end of said gain fiber, and (b) passing said VCSEL laser beam from said gain fiber to said output port for extraction from said source, said VCSEL laser beam being amplified by said gain fiber during its transit from said one end to said output port, whereby the output of the pump laser transits said gain fiber twice, first in transit from the pump laser to the VCSEL, second in transit from the VCSEL to the output port.

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Art Unit: 2828

Claims 2-8, 10-14 and 16 are each allowable for the reasons states above with regard to the associated independent claims 1, 9 and 15, and also for other reasons. Claims 2-8 recite further distinguishing limitations to related base claim 1. For example, claim 2 recites that the pump laser output and the VCSEL laser output are of different wavelengths. Claim 5 recites that the fiber amplifier comprises a doped optical fiber. Because Jiang fails to teach the amplifier of claim 1, Jiang certainly fails to teach the doped optical fiber amplifier of claim 5. Claims 10-14 recite distinguishing features related to the mirrors and lenses employed to configure the laser outputs in accordance with claim 9. Because Jiang fails to teach the feature of combining the VCSEL output with a portion of the pump laser output not provided to the VCSEL, Jiang certainly fails to teach the mirror and lens configurations recited in claims 10-14 that refine the feature.

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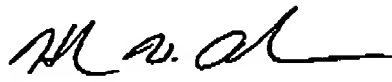
Art Unit: 2828

Applicants thank the Examiner for indicating allowable subject matter. Applicants have made a diligent effort to place all of the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Holmes W. Anderson, Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

22 April 2004  
Date

  
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Docket No. CORE-70 120-382  
Dd: 4/25/2004 (2 mo date)